AMENDMENTS TO THE SPECIFICATION

The amended paragraphs presented below do not contain new matter. The paragraph 4 is amended to clarify the term "channel" to "RF propagation channel." The paragraphs 32 and 40 are amended for consistent terminology. Paragraph 45 is amended to clarify FIG. 6.

[04] In packet-based wireless communication systems, a transmitted packet may be received with a large range of signal strengths, that is, a wide dynamic range. For example, in an 802.11 system, there may be as much as a 100 dB difference in signal strength between packets received at receiver A sent from transmitter B versus a packet received by receiver A sent from transmitter C. Factors accounting for this variation include path loss and fading characteristics of [[the]] a RF propagation channel, for example. Path loss may include attenuation losses incurred due to the distance existing between a transmitter and a receiver. Fading characteristics of the RF propagation channel may include multipath interference destructively combining to reduce the strength of the signal received at the receiver. A well-designed communication transceiver must perform reliably given these impairments that are characteristic of wireless media. In this regard, a goal of a well-designed communication transceiver is to mitigate these characteristic impairments. In order to achieve this goal, a practical receiver may make use of automatic gain control (AGC). Automatic gain control can be described as an algorithm that may be adapted to automatically adjust signal size in order to maximize some parameter.

[32] FIG. 4 is a block diagram of a receiver that may be utilized for improving dynamic range using upstream analog information in accordance with an embodiment of the invention. Referring to FIG. 4, the receiver comprises a mixer 402, a low pass filter (LPF) block 404, a plurality of gain (G) [[control]] blocks [[(GCs)]] 406a, 406b, ..., 406n, and analog-to-digital converter (ADC) block 408. The receiver may be part of a packet-based wireless system, which may be adapted to receive a signal that is transmitted at a particular carrier frequency.

[40] FIG. 6 is a block diagram of a receiver 600 that may be utilized for improving dynamic range using upstream analog information in accordance with an embodiment

of the invention. Referring to FIG. 6, the receiver comprises a mixer 602, a low pass filter (LPF) 604, a plurality of gain blocks [[(GCs)]] 606a, 606b, ..., 606n, analog-to-digital converters (ADC) 612a, 612b, 612c, ..., 612n, gain control block 614 and ADC processing paths 610a, 610b, ..., 610n. The receiver of FIG. 6 may also comprise a processor block 622 and a memory block 624.

[45] A value of the collected power may be compared to a table of thresholds, which correspond to an input signal power at fixed values. Based on this comparison, an intermediate gain may be applied which may enable detection of carrier sense (CS) and prevent clipping at the ADC. This intermediate gain may provide a more accurate power estimate that may be utilized by the automatic gain controller to determine a more precise final gain that is to be applied to the packet. In this regard a plurality of intermediate gains may be generated and these intermediate gains may be utilized to more accurately determine final gain to be applied to the packet by the AGC. FIG. 6 shows a single channel of received signals from the output of a single mixer for ease of explanation. However, a RF receiver, such as the receiver 600, may comprise a plurality of mixers for demodulating a plurality of channels, such as, for example, I and Q channels, of the received signal. The received signal may also be downconverted to a single intermediate frequency (IF) channel, and the IF channel may be demodulated to, for example, the I and Q channels. Accordingly, a plurality of upstream analog information may be generated for a single channel, or for the plurality of channels, for example, the I and Q channels, of the received signal.